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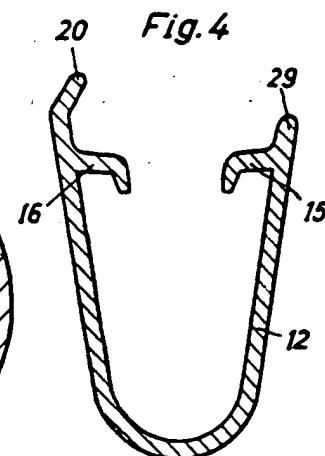
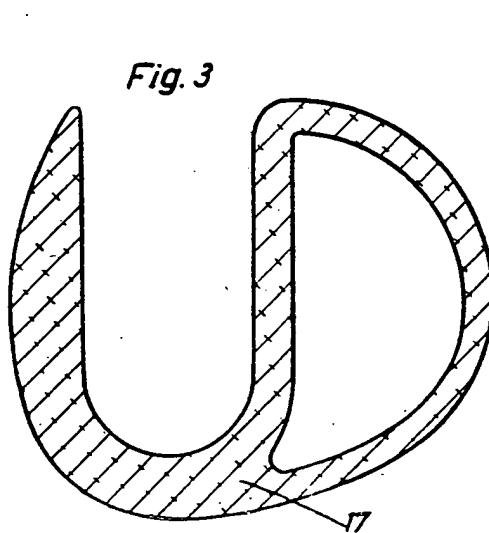
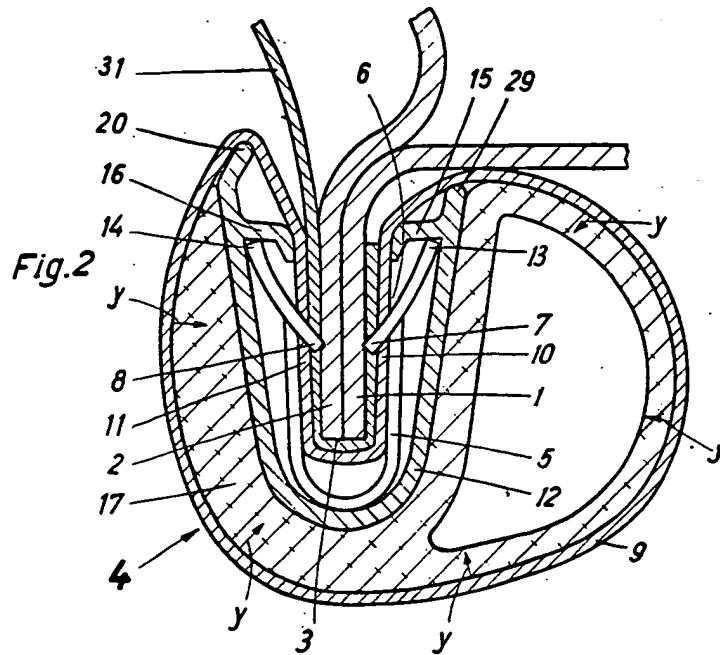
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4 SHEETS

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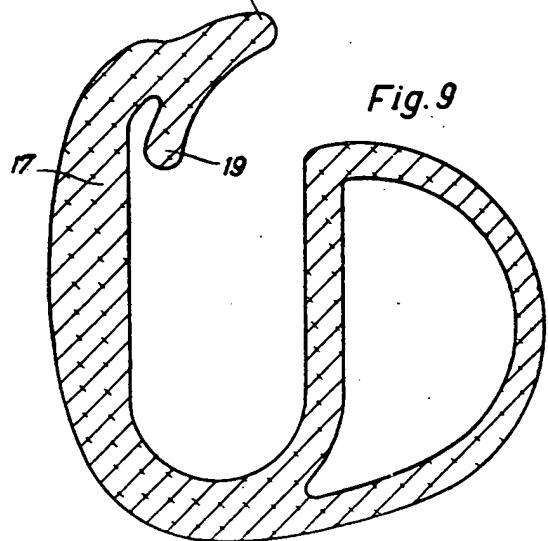
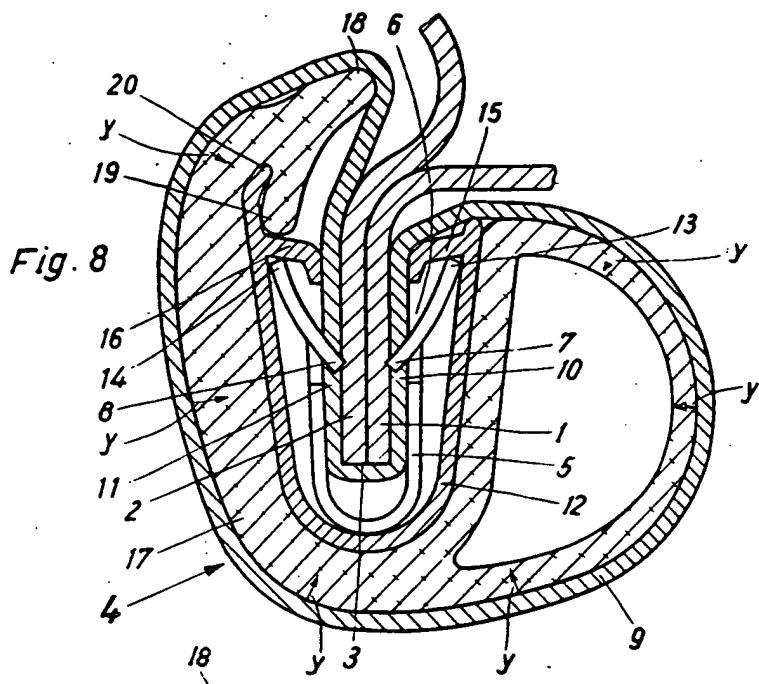
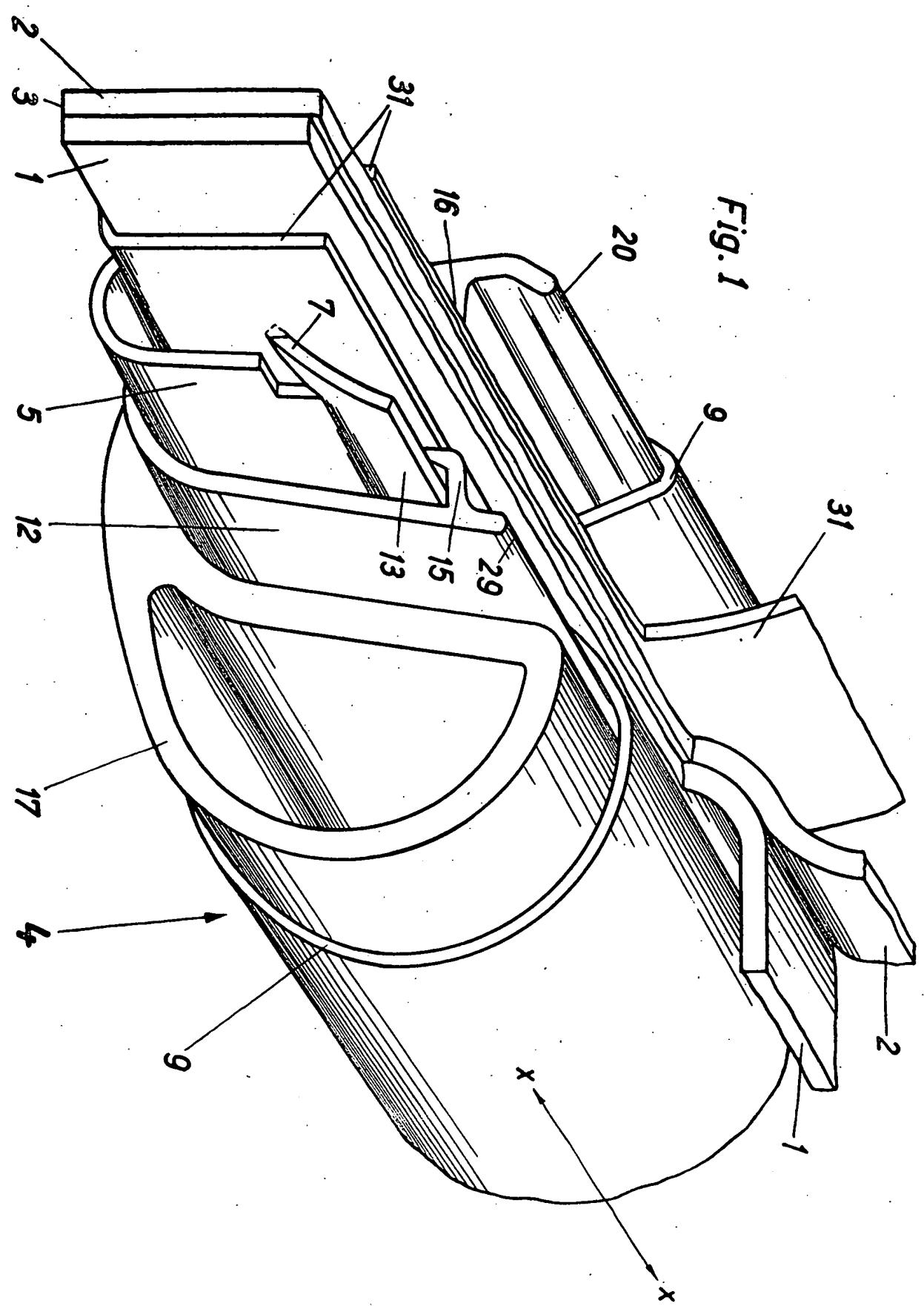


Fig. 1



PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in or relating to Sealing Strips or Edge Packings

We, GEBR. HAPPICH G.M.B.H., a German Company, of 64—76, Neuenteich, Wuppertal-Elberfeld, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

This invention concerns sealing strips or edge packings, particularly for the doors of motor vehicles and is an improvement or modification of the invention described in the specification of our co-pending application for patent No. 757/60 (Serial No. 873,013), hereinafter called "the parent application".

The parent application concerns a sealing strip or edge packing particularly for the doors of motor vehicles, and more particularly relates to an edge packing which can be clipped on to rabbets and having an upholstery filling masked by a covering, said covering being formed by a flexible tube, the wall of which forms a re-entrant portion passing into the jaws of the clip.

The present invention concerns an improved arrangement of this invention, particularly for the purpose of simplifying the inner construction of the sealing strip or edge packing and for achieving simpler more complete assembly thereof.

The proposed improvement resides in the feature that the covering tube is elastically expandable.

Due to such expansibility the sealing strip or edge packing can be positioned without creases. In particular, no creases are formed at the corner bends, although, in the case of such corner bends the outer portion of the wall of the tube has to cover a much greater portion of sealing strip or edge packing than at the inner edge.

The elastic expansibility is preferably in the longitudinal direction of the tube. In this connection, it is to be borne in mind that when expansion occurs in the longitudinal direction of the tube, there simultaneously occurs a reduction of cross section. Each reduction in the

cross section of the tube results in increase of the stability of the sealing strip or edge packing, since the entire arrangement of the sealing strip or edge packing is covered thereby with a clamping effect.

Due to this clamping effect of the covering the inner construction of the sealing strip or edge packing can be greatly simplified because the individual components need not be tightly connected together. In particular the connection described in the parent application between the supporting strip and the upholstery cover is unnecessary. Due to the corset-like enclosing of the upholstery cover by means of the covering tube shrunk radially by axial expansion the components, particularly the upholstery covering and the metal supporting strip are firmly held together.

For increasing this effect, in addition to the elastic expansibility of the covering tube independent expansibility in the radial direction is provided. The expansibility of the covering tube can be achieved by the use of appropriate material for the covering tube or by appropriate construction of the covering tube. Thus, for example, a textile tube woven completely or partly of elastic threads may be concerned, or the tube may consist of diagonal weaving.

In the case of covering tubes which are not manufactured from textile material, suitably elastically expandible material, such as rubber, or the like, must be used.

The provision of such an elastic tube makes it possible to form the curvature of the edge nearest to the centre of curvature at the corner bends of the sealing strip or edge packing differently from the curvature of the corresponding edge remote from the centre of curvature. This is advantageously achieved in accordance with the present invention by bulging out the covering tube on the outer edge of the corner by means of an inner support.

This possibility is of considerable importance particularly with regard to adaptation to the course of a rabbet on a vehicle body. A very favourable arrangement in respect of

manufacture and assembly for achieving the bulging out of the covering tube is provided in accordance with the present invention by the feature that the inner support is formed by
 5 a tongue located on the supporting strip of the edge packing or sealing strip and the supporting surfaces of which, merging tangentially with the upper edge of the supporting strip, form an apex projecting beyond the
 10 curvature of the upper edges of the supporting strip.

With this arrangement, the shape of the inner supporting strip of the sealing strip or edge packing can be maintained over its entire length. Separate tongues are provided only at the corner turns of the supporting strip and provide the bulging out of the covering tube.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:—

20 Fig. 1 is a perspective view of a first embodiment of sealing strip or edge packing in accordance with the invention, showing the individual components thereof;

25 Fig. 2 is a cross section through the sealing strip or edge packing of Fig. 1;

Fig. 3 is a cross section through the upholstery filling of the edge packing of Figs. 1 and 2;

30 Fig. 4 is a cross section through the supporting strip of the edge packing of Figs. 1 and 2;

Fig. 5 illustrates a corner turn made with the edge packing of Figs. 1 and 2;

35 Fig. 6 is a cross-section taken on the line A—B of Fig. 5;

Fig. 7 is a cross section taken on the line C—D of Fig. 5;

40 Fig. 8 is a cross section showing a modified construction of edge packing in accordance with the invention; and

Fig. 9 is a cross section through the upholstery filling of the edge packing shown in Fig. 8.

45 An edge 3 formed by projecting walls 1 and 2 of a rabbet (e.g. on a motor vehicle door) is protected by an edge packing 4 e.g. for protection in the case of an accident or for sealing purposes.

50 The edge packing 4 is secured in place by securing cramps or clips 5, which are arranged at intervals from each other, between the jaws 6 of which the walls 1 and 2 extend. Projecting into the jaws 6 are claws 7 and 8 of the clip, which jaws 6 are pointed like barbs. In

55 the assembled condition of the edge packing 4, a covering tube 9 forms a re-entrant portion passing between the jaws 6 of the cramps or clips 5. Wall portions 10 and 11 of the covering tube 9 are located between the cramps or clips 5 and the walls 1 and 2, including the edge 3. The claws 7 and 8 penetrate the tube 9 in the region of its wall portions 10 and 11.

60 The covering tube 9 is elastically expandable, primarily in the longitudinal direction

as indicated at x—x. The tube consists of textile material. Elastic expansibility is achieved by the use of appropriate elastic threads.

65 Each mounting cramp or clip 5 is fitted in a V-shaped supporting strip 12. This fitting is achieved by arranging the outer ends 13 and 14 of the cramp or clips against corresponding shoulders 15 and 16 of the supporting strip 12. An upholstery filling 17 is located on the outside of the supporting strip 12 but is unconnected thereto. It is pressed against the supporting strip 12 by the covering tube 9 which encloses the entire arrangement consisting of clip 5, strip 12 and filling 17 in the manner of a corset. This pressure action is caused substantially by the elastically expansible construction of the covering tube 9. Even when this tube 9 expands only in the actual direction x—x this expansibility results in pressure forces in the direction of the arrows y, since if the covering tube 9 is longitudinally expanded, cross sectional shrinkage occurs. If the pressure forces in the direction of the arrows Y are to be strong independent elastic, radial expansibility can be simultaneously achieved in the manufacture of the tube, e.g., in the form of a textile tube.

70 Compared with the use of a non-elastic tube, the elastic expansibility also makes it possible for the inner tensions of the tube to prevent loosening of the seat of the edge packing 4 on the walls 1 and 2.

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In the embodiment shown in Figs. 8 and 9 the upholstery filling 17 has a lip 19 on its upper longitudinal edge 18, said lip 19 engaging over the projecting end 20 of the supporting strip 12. Due to this construction, a limited seating of the upholstery filling 17 on the supporting strip 12 is achieved. In certain circumstances, this is an advantage when inserting the clips 5 strip 12 and filling 17 into the covering tube 9, since, due to this insertion and on account of the wall portions 10 and 11, the inner measurement of the covering tube 9 is much greater than the outer measurement of the upholstery filling 17.

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In the corner bend shown in Fig. 5, the outer edge 21 extends in a direction different from that of the inner edge 22. This difference is caused by a bulging 23 of the covering tube 9, this bulging 23 is achieved by a tongue 24 which forms an inner support and is located on the supporting strip 12. Supporting surfaces 25 of the tongue 24 merge tangentially into the upper edges 26 and 26¹ of the supporting strip 12 and form an apex 27 projecting beyond the supporting strip 12 at the corner. Below the apex 27 a flap 28 is bent from the tongue 24 which flap 28 engages in the region of curvature 29 around the supporting strip 12, the shoulder 15 of the supporting strip 12 being preferably interrupted at this position. At the ends 24¹ of the tongue 24 is formed so that flaps 30 engage approxi-

mately round the entire supporting strip 12.

5 Due to the elastic expansibility of the covering tube 9, the latter extends without creases along the inner edge 22 and also without creases along the outer edge 21 which extends in a completely different direction. Other corner bends may also be provided.

10 When the edge packing 4 is assembled, sealing member 31 can be incorporated at the same time, for example, if the edge packing 4 extends along the upper rabbet of a vehicle door aperture.

WHAT WE CLAIM IS:—

15 1. A sealing strip or edge packing for clipping on to rabbets, more particularly for the doors of motor vehicles, as claimed in claim 1 of application No. 757/60 (Serial No. 873,013) and characterised in that the covering tube thereof is elastically expansible.

20 2. A sealing strip or edge packing as claimed

in claim 1, characterised in that the covering tube is bulged on the outer edge at a corner bend by means of an inner support.

25 3. A sealing strip or edge packing as claimed in claim 2, characterised in that the inner support is formed by a tongue located on the supporting strip of the edge packing, supporting surfaces of said tongue merging tangentially into the upper edges of the supporting strip to form an apex projecting beyond the curvature of the upper edge of the supporting strip.

30 4. A sealing strip or edge packing substantially as hereinbefore described with reference to and as illustrated in Figs. 1 to 7 or Figs. 8 and 9 of the accompanying drawings.

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